PATENT
TS5595 (US)
CML:EM

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF APPEALS AND INTERFERENCES

In re application of	)	
	)	
NICHOLAS J. ADAMS and	)	
GILBERT R. B. GERMAINE	)	Confirmation No.: 4917
	)	
Serial No. 10/583,758	)	Group Art Unit: 1797
	)	
Filed June 21, 2006	)	Examiner: Brian A. McCaig
	)	
PROCESS TO PREPARE A HAZE FREE BASE OIL	)	October 1, 2009
	)	

COMMISSIONER FOR PATENTS
P. O. Box 1450
Alexandria, VA 22313-1450

Sir:

APPEAL BRIEF

Applicants hereby submit this Appeal Brief in order to appeal the final rejection of claims 1-4, 6-15 and 17-22 in the office action mailed April 1, 2009.

Please charge any fees that are necessary in connection with this brief to Shell Oil Company, Deposit Account No. 19-1800.

Real Party in Interest

The real party in interest is Shell Oil Company.

Related Appeals and Interferences

To the best of the undersigned's knowledge, there are no related appeals or interferences.

Status of the Claims

Claims 1-22 were pending in this case. Claims 5 and 16 have been canceled. Claims 1-4, 6-15 and 17-22 were finally rejected in the office action mailed April 1, 2009 and are on appeal.

Status of Amendments

No amendments to the claims have been filed since the Final Rejection.

Summary of Claimed Subject Matter

The application currently contains two independent claims, namely claims 1 and 12. The invention as set forth in claim 1 is directed to a process to prepare a haze free base oil having a kinematic viscosity at 100°C of greater than 10 cSt from a Fischer-Tropsch wax feed. This is discussed in the specification at page 14, lines 18-29. The process involves three steps. In the first step, the wax content of a Fischer-Tropsch wax feed is reduced by contacting the feed with a hydroisomerization catalyst under hydroisomerization conditions at a remote location to form an intermediate product having a wax content between 10 and 35 weight percent. This process is discussed in the specification at page 5, line 17 to page 11, line 17. In the second step, the intermediate product is transported from the remote location to another location closer to an end user. This step is discussed in the specification at page 11, line 18 through page 12, line 7. In the third step, the transported intermediate product is solvent dewaxed to obtain a haze free base oil at the location closer to the end user. This is discussed in the specification at page 12, line 8 to page 13, line 2.

Claim 12 is directed to a process to prepare a lubricant composition not containing a viscosity modifier additive by blending a low viscosity base oil with a haze free base oil having a kinematic viscosity at 100°C of greater than 10 cSt prepared from a Fischer-Tropsch wax feed by a particular process. This process is discussed generally at page 14, line 30 to page 15, line 12. The

process involves three steps. In the first step, the wax content of the Fischer-Tropsch wax feed is reduced by contacting the feed with a hydroisomerization catalyst under hydroisomerization conditions at a remote location to form an intermediate product having a wax content between 10 and 35 weight percent. This is discussed in the specification at page 5, line 17 to page 11, line 17. In the second step, the intermediate product is transported from the remote location to another location closer to an end user. This is discussed in the specification at page 11, line 18 to page 12, line 7. In the third step, the intermediate product is solvent dewaxed to obtain a haze free base oil at the location closer to the end user. This step is discussed at page 12, line 8 to page 13, line 2 of the specification.

Grounds of Rejection to be Reviewed on Appeal

In the final office action, claims 1-4, 6-15 and 17-22 were rejected under 35 U.S.C. 103(a) as being unpatentable over Benard et al. (WO 02/099014) in view of Miller (US 6,699,385) and Bradford (WO 05/044954).

Argument

Rejection of claims 1-4, 6-15 and 17-22 under 35 U.S.C. 103(a) over Benard in view of Miller and Bradford

The present invention is directed to a process to prepare a haze free base oil having a kinematic viscosity at 100°C of greater than 10 cSt from a Fischer-Tropsch wax. The process is adapted to treat Fischer-Tropsch waxes that are formed at remote locations. In the first step, the wax content of the Fischer-Tropsch wax is reduced by contacting the feed with a hydroisomerization catalyst to form an intermediate product having a wax content between 10 and 35 weight percent. This intermediate product is then transported from the remote location to another location closer to an end user. In a next step, solvent dewaxing is used to treat the intermediate product to obtain a haze free base oil.

As set forth on page 2, beginning at line 17 of the specification, the process according to the invention is advantageous because the first step is performed at a remote location. Thus, any low boiling by-products advantageously can be blended with lower boiling products of the Fischer-Tropsch process at that remote location. A further advantage is that the third step is performed at a location closer to the end user, thus allowing the user of the process to choose the dewaxing

technique most suited for the specific application. The process is advantageous because all of the intermediate product can be efficiently used. As discussed on page 3, lines 17 through 23 of the specification a further advantage is that it is possible with the present invention to prepare high viscosity grade base oils without having to perform a deep-cut distillation in order to remove possible haze-precursors as for example described in WO-A-03033622.

In the Office Action, claims 1-4, 6-15 and 17-22 were rejected under 35 U.S.C. 103(a) as being unpatentable over Benard in view of Miller and Bradford. Benard is directed to a process to prepare a base oil starting from a slack wax containing feed stock that can include Fischer-Tropsch wax. It does not address the problem of making a Fischer-Tropsch wax feed more transportable by reducing the wax content to between 10 and 35 weight percent such that it can easily be transported from a remote location. The Miller reference is directed to a process for producing a low haze heavy base oil including the steps of providing a heavy waxy feed stream, separating the heavy feed stream into a heavy fraction and a light fraction by a deep-cut distillation, and hydroisomerizing the light fraction to produce a low haze heavy base oil. The Bradford reference is directed to a process to transport methanol or other hydrocarbon product. In this process, air is separated into oxygen and nitrogen and the oxygen is used to prepare a mixture of carbon monoxide and hydrogen from a carbonaceous source. This mixture of carbon monoxide and hydrogen is then used to prepared methanol or a liquid or solid hydrocarbon product. The methanol or liquid or solid hydrocarbon product is then loaded onto a ship together with the nitrogen obtained in the first step. This reference does not disclose partially dewaxing a Fischer-Tropsch wax feed to make it more transportable.

The present invention involves two separate steps to reduce the wax content of a Fischer-Tropsch wax feed to obtain a haze free base oil. The first step is performed at a remote location to reduce the wax content to between 10 and 35 weight percent so that it can more easily be transported. The partially dewaxed intermediate product is then transported from a remote location to a location near an enduser where it is subjected to solvent dewaxing the obtain the haze free base oil. Applicants submit that this two-step dewaxing process is neither taught nor is it suggested by the references cited by the Examiner. The present invention provides an economic solution to transportation problems of Fischer-Tropsch derived wax feeds at remote locations while providing high yields of highly viscous base oils.

Conclusion

Based on the foregoing arguments, Applicants assert that the claims of the present application would not have been obvious in view of the cited references. It is respectfully requested that this Appeal be upheld and that the application be sent back to the Examiner for allowance.

Respectfully submitted,

NICHOLAS J. ADAMS and
GILBERT R. B. GERMAINE

By /Craig M. Lundell/
Their Attorney, Craig M. Lundell
Registration No. 30,284
(713) 241-2475

P. O. Box 2463
Houston, Texas 77252-2463

CLAIM APPENDIX

1. A process to prepare a haze free base oil having a kinematic viscosity at 100 °C of greater than 10 cSt from a Fischer-Tropsch wax feed comprising the following steps:

(a) reducing the wax content of a Fischer-Tropsch wax feed by contacting the feed with a hydroisomerisation catalyst under hydroisomerisation conditions at a remote location to form an intermediate product having a wax content between 10 and 35 wt%;

(b) transporting the intermediate product having the reduced wax content as obtained in step (a) from the remote location to another location closer to the end-user; and

(c) solvent dewaxing the transported intermediate product to obtain a haze free base oil at the location closer to the end-user.

2. The process according to claim 1, wherein the feed to step (a) has a 10 wt% recovery boiling point of above 500 °C and a wax content of greater than 50 wt%.

3. The process according to claim 2, wherein the wax content in the feed is between 60 and 95 wt%.

4. The process according to claim 2, wherein the 10 wt% recovery boiling point of the feed is between 500 and 550 °C.

Claim 5 (Canceled).

6. The process according to claim 1, wherein the intermediate product has a congealing point of between 20 and 60 °C.

7. The process according to claim 1, wherein more than 50 wt% of the intermediate product boils above the 10 wt% recovery point of the feed used in step (a).

8. The process according to claim 7, wherein more than 70 wt% of the intermediate product boils above the 10 wt% recovery point of the feed used in step (a).

9. The process according to claim 1, wherein the hydroisomerisation catalyst used in step (a) is a substantially amorphous based catalyst comprising a silica-alumina carrier and a noble or non-noble Group VIII metal.

10. The process according to claim 1, wherein the hydroisomerisation catalyst used in step (a) is a molecular sieve based catalyst and a noble or non-noble Group VIII metal.

11. The process according to claim 1, wherein step (b) is performed by means of a ship and wherein containers on the ship are first purged with nitrogen before loading and wherein the nitrogen is obtained in an air-separation unit which unit also isolates oxygen for use to make syngas which in turn is used as feedstock to prepare the Fischer-Tropsch wax feed.

12. A process to prepare a lubricant composition not containing a viscosity modifier additive by blending a low viscosity base oil with a haze free base oil having a kinematic viscosity at 100°C of greater than 10 cSt from a Fischer-Tropsch wax feed prepared by a process comprising the following steps:

(a) reducing the wax content of a Fischer-Tropsch wax feed by contacting the feed with a hydroisomerisation catalyst under hydroisomerisation conditions at a remote location to form an intermediate product having a wax content between 10 and 35 wt%;

(b) transporting the intermediate product having the reduced wax content as obtained in step (a) from the remote location to another location closer to the end-user; and

(c) solvent dewaxing the transported intermediate product to obtain a haze free base oil at the location closer to the end-user.

13. The process according to claim 12, wherein the feed to step (a) has a 10 wt% recovery boiling point of above 500 °C and a wax content of greater than 50 wt%.

14. The process according to claim 12, wherein the wax content in the feed is between 60 and 95 wt%.

15. The process according to claim 12, wherein the 10 wt% recovery boiling point of the feed is between 500 and 550 °C.

Claim 16 (Canceled).

17. The process according to claim 12, wherein the intermediate product has a congealing point of between 20 and 60 °C.

18. The process according to claim 12, wherein more than 50 wt% of the intermediate product boils above the 10 wt% recovery point of the feed used in step (a).

19. The process according to claim 12, wherein more than 70 wt% of the intermediate product boils above the 10 wt% recovery point of the feed used in step (a).

20. The process according to claim 12, wherein the hydroisomerisation catalyst used in step (a) is a substantially amorphous based catalyst comprising a silica-alumina carrier and a noble or non-noble Group VIII metal.

21. The process according to claim 12, wherein the hydroisomerisation catalyst used in step (a) is a molecular sieve based catalyst and a noble or non-noble Group VIII metal.

22. The process according to claim 12, wherein step (b) is performed by means of a ship and wherein containers on the ship are first purged with nitrogen before loading and wherein the nitrogen is obtained in an air-separation unit which unit also isolates oxygen for use to make syngas which in turn is used as feedstock to prepare the Fischer-Tropsch wax feed.

EVIDENCE APPENDIX

None

RELATED PROCEEDINGS APPENDIX

None